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# PATENT SPECIFICATION

205,515



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Complete Accepted: Dec. 27, 1923.

## COMPLETE SPECIFICATION.

### Improvements in Inking Apparatus for Duplicating Apparatus.

We, ADOLPHE BESSAT and LEON LOUIS LIEVENS, of 16 and 19, respectively, rue du Vieux Port, Nanterre (Seine), France, citizens of the French Republic, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 This invention relates to an automatic inking device applicable to the printing cylinders of duplicating apparatus of any construction and more particularly duplicating apparatus of the type described in Specification No. 196,567.

15 Inking devices disposed within the perforated printing cylinders of rotary duplicating apparatus are known. In such apparatus the ink is distributed over the inner face of the perforated cylinder and impregnates a fabric band which is wound outside the said cylinder and constitutes an ink pad; on the said band is placed the stencil to be reproduced.

20 An inking device according to the present invention essentially comprises a central ink container constituted by a double tube concentric with the printing cylinder and provided with slots for opening and closing the ink container, a set of distributing rollers receiving ink from the central ink container and transmitting it to the perforated casing of the cylinder, means to adjust the position of the first distributing roller relatively to the outlet of the ink container, and pivoted spring-controlled supports for the other distributing rollers.

25 In order that the invention may be fully understood, a practical construction according to the invention is illustrated by way of example in the accompanying drawing.

30 Figure 1 shows, in longitudinal section, one of the printing cylinders of a duplicating apparatus of the type described in the aforesaid Specification No. 196,567, which cylinder is provided with the internal inking device according to the present invention.

[Price 1/-]

Figure 2 shows, in end view on an enlarged scale, the interior of the said cylinder and the arrangement of the ink distributing rollers which are fed from the central ink container and convey the ink to the perforated casing of the printing cylinder.

Figure 3 is a detail view, on an enlarged scale, showing the method of mounting the said rollers and their pivoted supports.

Figures 4 and 5 show in section the central ink container in the closed and open positions.

The printing cylinder shown is constituted as described in the above-mentioned Specification No. 196,567 by a perforated casing 1 mounted on two rings 2 and 21 by means of which are secured two side covers 3 and 3' mounted in their turn on a fixed hollow spindle 4, their rotation being produced by any suitable mechanical means. The said fixed hollow spindle contains in its interior a second tube 5 containing the ink intended for the printing and constituting a central ink container. This ink containing tube is closed at two points of its length by a fixed plug 6 and by a removable plug 7 which facilitates its cleaning. At one end is a milled button 8 by turning which the ink container can be opened by bringing two slots 9 and 9' (Figures 4 and 5) provided in the tube 5 and in the fixed hollow spindle 4 into coincidence.

To fill the ink container, it is only necessary to pull the milled button 8. The ink container is thus withdrawn from its hollow spindle, and ink is introduced through the opening 9 provided at its upper portion (Figure 4). By pushing in the milled button, the ink container is returned to its normal position.

A small pointer 10 secured to the milled button 8 indicates whether the ink container is open or closed.

In the interior of the printing cylinder and on the spindle 4 is secured a device 11 (see Figure 2) constituted by a bracket on which are mounted three ink-distributing rollers.

ing rollers 12, 13 and 14 held in contact with each other owing to the method of mounting hereinafter described.

The spindle of the first roller 12 is supported by movable blocks 15 which are adjustable in guides provided in the bracket 11. Figures 2 and 3 show the method of mounting only one end of the spindles of the various rollers, the method of mounting the other end is identical. Set-screws 16 and 17 are provided by which the position of the blocks 15 and therefore the position of the roller 12 relatively to the slot 9<sup>1</sup> of the ink container may be adjusted.

The roller 12 therefore receives ink direct from the central container, the supply being regulated as described by regulating the position of the roller by means of the set-screws 16 and 17.

The spindle of the second roller 13 is supported at its ends by two arms 18 (only one being visible in Figures 2 and 3) each pivoted to the corresponding support 11 at 19. Return springs 20 secured at 21 to the support 11 act on the arms 18 and thus hold the roller 13 in contact with the roller 12 with a suitable pressure, whatever be the position given to the said roller 12.

The third roller 14 has its spindle supported by two levers 22 (only one being visible in Figures 2 and 3), each pivoted at 23 to the corresponding support 11. Return springs 24 attached at 25 to the support 11 act on the levers 22 to ensure contact between the roller 14 and the inner face of the perforated casing 1.

Owing to the said method of mounting, a perfect adhesion of the various surfaces that must be in contact, is ensured, in spite of any vibrations that may take place during the rotation of the cylinder.

The ink discharged on the first roller 12 by the central ink container spreads uniformly over the surface of the said roller which transmits it to the roller 13, uniformly distributing it over the surface of the said second roller which, in its turn, inks in a uniform manner the surface of the roller 14; and the latter roller ensures a uniform inking of the inner surface of the perforated casing.

Over the said perforated casing is wound a band of fabric 26 of suitable length which is hooked to the cylinder by means of buttons 28 and held stretched by a tension device such as described in the aforesaid Specification No. 196,567. This band becomes impregnated with ink through the perforated casing and forms an ink pad. The stencil 27 to be reproduced is hooked by one end to the cylinder

on the said buttons 28 and wound on the fabric band on which it is held by adhesion as described in the said Specification No. 196,567.

The bearing spindle 4 of the printing cylinder is mounted in the frame 29 of the duplicating apparatus and secured by means of suitable devices 30 adapted to swing on suitably arranged hinges so as to enable the cylinder to be put in place and withdrawn.

The proper assembling of the bearing spindle 4 in the said devices is ensured by projections 31 provided on the said spindle and adapted to engage with suitable seats provided in the bearings receiving the spindle (see Figure 1). The object of these projections is to lock the spindle 4 and consequently the central ink container 5, thus preventing them from being driven by the rotation of the cylinder as already described and set forth in Specification No. 196,567.

Obviously the construction described is given merely by way of example, and any constructive modifications can be made in it without departing from the invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. An automatic internal inking device applicable to printing cylinders provided with a perforated casing in duplicating apparatus of any type and more particularly duplicating apparatus of the type described in Specification No. 196,567, characterised by a central ink container constituted by a double tube concentric with the printing cylinder and provided with slots for opening and closing the ink container, a set of distributing rollers receiving ink from the central ink container and transmitting it to the perforated casing of the cylinder, means to adjust the position of the first distributing roller relatively to the outlet of the ink container, and pivoted spring-controlled supports for the other distributing rollers.

2. The automatic internal inking device for duplicating apparatus substantially as described or substantially as illustrated in the accompanying drawings.

Dated this 13th day of October, 1923.

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